Project Baseline Summary Report

Data Source: **EM CDB** Report Number: **GEN-01b**

Operations/Field Office: **Idaho** Print Date: **3/10/2000**

Site Summary Level: **Idaho National Engineering and Environmental Laboratory** HQ ID: **0219**

Project **ID-LRP-102 / Technology Deployment Center Demonstration Facility**

General Project Information

Project Description Narratives

Purpose, Scope, and Technical Approach:

----------THIS IS NOT A FACILITY!!!!---------- SUMMARY: The purpose of the Technology Deployment Center (TDC) at the INEEL is to facilitate and provide a coordinated approach to the utilization of innovative technologies for the reduction of the DOE mortgage, the acceleration of clean up schedules, the reduction of risk, and the improved performance of the Environmental Management (EM) Program. The TDC at the INEEL serves as a conduit through which technologies can be matured through every stage of their life cycle (development, demonstration, and deployment). The TDC brings innovative technologies and processes to bear on the most pressing environmental needs at the INEEL and translates them to the DOE Complex.

The TDC provides facilitated technical solutions to every operational Project Baseline Summary (PBS) at the INEEL.

The following INEEL Environmental Remediation PBSs are specifically supported to reduce cost, risk and accelerate schedule: ID-ER-101, ID-ER-102, ID-ER-103, ID-ER-104, ID-ER-105, ID-ER-106, ID-ER-107, ID-ER-108, and ID-ER-110.

The following INEEL Waste Programs PBSs are specifically supported to reduce cost, risk and accelerate schedule: ID-WM-101, ID-WM-103, ID-WM-106, and ID-WM-107.

The following INEEL Spent Nuclear Fuel PBSs are specifically supported to reduce cost, risk and accelerate schedule: ID-SNF-102, ID-SNF-103, ID-SNF-104, and ID-SNF-105.

The following INEEL Site Wide Operations PBSs are specifically supported to reduce cost, risk and accelerate schedule: ID-OIM-101, and ID-OIM-102.

The following INEEL High-Level Waste Operations PBSs are specifically supported to reduce cost, risk and accelerate schedule: ID-HLW-101, ID-HLW-103, ID-HLW-104, and ID-HLW-105.

SUMMARY: The scope of the TDC includes the following activities which directly benefit the operational programs as well as those activities which promote the life cycle development of technologies for the benefit of the DOE complex.

1) TECHNOLOGY LIFECYCLE MANAGEMENT - The tasks associated with this activity include the maintenance of the protocols, processes, and points of contact champions needed to keep the TDC open to the DOE Complex and the Nation as a whole. This includes specific activities focused on eliminating barriers and issues associated with technology demonstration and deployment. Specifically included are the elimination of regulatory barriers, stakeholder issues, management concerns, and physical limitations (facilities, security, waste management, etc.).
2) TECHNOLOGY PORTFOLIO - The tasks associated with this activity include collecting and documenting the wide spectrum of information needed to promote a given technology. This includes information needed to verify and validate technologies for various applications. The maintenance of the TDC technology portfolio includes all the information necessary to document the entire life cycle of any given technology

Project Description Narratives

(development, demonstration, and deployment).
3) TRANSLATION OF TECHNOLOGIES - The tasks associated with this activity include the identification of specific technology applications in the DOE Complex through the utilization of the Site Technology Coordination Groups at each site as well as the national EM Integration effort. Following the identification of subsequent applications the lessons learned and applied engineering are used successfully export the technologies.

SUMMARY: The TDC is comprised of SIX FUNCTIONAL AREAS, each with a specialized ability to support the EM mission. These functions are as follows 1) Subsurface Terra Science; 2) Waste Treatment; 3) Remediation; 4) Material Characterization; 5) Deactivation and Decommissioning; and 6) INEEL Environmental Preserve. Each of these functions has specific, designated existing facilities that support the life cycle development of technologies. Most of these facilities are part of real cleanup activities and each is unique in its ability to support technology maturation. The CROSSCUTTING CAPABILITIES established at the INEEL provide the foundation for the successful execution of the TDC. These capabilities are as follows: 1) Biotechnology; 2) Chemical separation and processing; 3) Earth science and environmental engineering; 4) Information science; 5) Intelligent automation and remote control; 6) Materials and structural integrity; 7)Modeling of physical systems; 8) Nuclear science; 9) Radiochemistry; 10) Sensing and diagnostics; 11) Systems Engineering, and 12) Applied engineering. The RESEARCH CAMPUS at the INEEL supports all six functional areas. This campus includes the INEEL Research Center; Idaho Engineering Demonstration Facility; INEEL Computing Environment; Remote Analytical Laboratory; TRA testing labs; TAN Hot Shop; INTEC pilot plants; Radiological and Environmental Sciences Laboratory; robotic laboratories, and the model and glass shops.

Project Status in FY 2006:

The TDC is an ongoing project that provides a coordinated approach to technology integration at the INEEL well as the entire DOE Complex. Site Technology Coordination Groups at most DOE sites have identified the technology needs that must be fulfilled to meet FY 2006 closure. These technology needs required for 2006 closure at the INEEL will be satisfied. In addition, the INEEL will serve as a technology test bed and maturation site for other technologies needed throughout the DOE Complex.

Post-2006 Project Scope:

The activities that are scheduled to occur after FY 2006 include technology life cycle management, this includes the maintenance of the protocols, processes, and points of contact champions needed to keep the TDC open to the DOE Complex and the Nation as a whole. Specific activities focused on eliminating barriers and issues associated with technology demonstration and deployment will be completed. A technology portfolio will be maintained, this includes collecting and documenting the wide spectrum of information needed to promote a given technology. The maintenance of the TDC technology portfolio includes all the information necessary to document the entire life cycle of any given technology (development, demonstration, and deployment). The identification of specific technology applications in the DOE Complex is ongoing. Following the identification of subsequent applications the lessons learned and applied engineering will be used to export the technologies to the sites in need.

Project End State

The requirements for technology continually evolves and will be completed when the EM mission around the DOE complex is complete. The end state of this project will be ultimately defined by the operational PBS at INEEL.

Cost Baseline Comments:

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Individual cost estimates were prepared for each activity in this PBS. The detailed cost estimates are for specific activities that must be performed to accomplish the project activities in full compliance with the regulatory compliance baseline. The activities and costs were rolled into a resource-loaded schedule that reflects current baseline compliance operations. We are now in the process of projectizing our activities to obtain further efficiencies. In completing the compliance baseline, an integral component of the projectization will be to perform a critical analysis of our estimates by an independent review team. The cost estimates are based on FY-98 dollars with escalation of 2.7% applied annually on a compound basis to FY 2006.

Safety & Health Hazards:

The range of hazards this PBS addresses is very broad and literally spans that of all the respective PBS referenced in the scope section of this narrative. In other words, the hazards addressed are a compilation of the hazards identified in all PBSs at the INEEL and vary in a manner that corresponds to those hazards identified.

Safety & Health Work Performance:

The resources necessary to accomplish the work safely are provided through the site health and safety program requirements, and through the resources allocated to the site`s integrated safety management system in the following functional categories: radiological safety, emergency management, fire safety, industrial hygiene, nuclear safety, occupational safety, safeguards and security, safety integration, performance oversight, and standards management. Safety and Health resources are planned and allocated into these categories by cost centers through the work breakdown structure and resource loaded into the project for each fiscal year. No appreciable change in these resources are anticipated when the project activities from HLW-101 continue on into this project. The same type of safety activities will carry on. Before starting new facilities or restarting old facilities, operational readiness reviews will be performed. Industrial Health will review test plans and prepare job hazard analyses for technical development work. Industrial Safety will review scoping and feasibility studies. Radiation Protection will monitor tracer studies and survey waste in the technical development area. Management Oversight will monitor work for compliance with requirements.

PBS Comments:

As part of the Idaho National Engineering and Environmental Laboratory`s core mission to provide enhanced environmental stewardship to the Department of Energy and the nation as a whole, several scoping and planning strategies have been assembled. The Department of Energy (DOE) Ten Year Plan Guidance and the Idaho National Engineering and Environmental Laboratory (INEEL) Environmental Management Ten Year Plan provide current direction for environmental management activities. DOE Ten Year Plan guidance as implemented by INEEL Environmental Management Ten Year Plan support this project. The INEEL plan guidance includes the INEEL Site Technology Coordination Group identified needs and opportunities in support of disposition of identified current and future wastes within the DOE complex. A current primary mission of the Department of Energy is the cleanup of radioactive and hazardous site environments from legacy nuclear arms production processes and cold war efforts.

This facility directly supports activities specified under the Settlement Agreement with the State of Idaho and has the support of the Idaho Congressional Delegation and the Govenor of the State of Idaho. A core component for enhanced environmental stewardship at the INEEL is the implementation of the National Environmental Engineering and Technology Center (NEETC) strategy. The NEETC strategy encompasses the construction and operation of this facility.

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Facility floorspace and testing infrastructure are required to perform environmental management waste treatment system scaled testing on actual DOE wastes for the purpose of obtaining and validating process scale-up performance and equipment sizing data, for validating proposed acceptable limits of operation, and for validating vendor claim information. At present, no facilities exist at the INEEL or are identified at other national laboratories which can provide diverse capabilities efficiently and cost effectively. For those remediation processes where technical, financial, and legal decision making has been performed based on estimations without the benefit of actual data and analysis, uncertainty still exists. The Department of Energy can benefit during the award and conduct of remediation contracts by the implementation and utilization of this facility for the purposes of reducing uncertainties and risk early in contract periods which can aid in the ultimate successful closure of written contracts and work scopes.

Impacts to identified INEEL missions for non-implementation of this facility include continued technical, legal and financial decision making based on estimations and non-validated process data with high uncertainties. Facility implementation options include utilization, to the maximum extent possible, of existing on-site facilities and equipment.

Baseline Validation Narrative:

General PBS Information

Project Validated? **Date Validated:**

Has Headquarters reviewed and approved project? No

Date Project was Added: 12/1/1997

Baseline Submission Date:

FEDPLAN Project? Yes

Drivers:

CERCLA	RCRA	DNFSB	AEA	UMTRCA	State	DOE Orders	Other
Y	Y	Y	N	N	N	Y	Y

Project Identification Information

DOE Project Manager: Patrick R. Trudel

DOE Project Manager Phone Number: 208-526-0169

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DOE Project Manager e-mail address: trudelpr@inel.gov

Is this a High Visibility Project (Y/N):

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Planning Section

Baseline Costs (in thousands of dollars)

	1997-2006 Total	2007-2070 Total	1997-2070 Total	1997	Actual 1997	1998	Actual 1998	1999	2000	2001	2002	2003	2004	2005	2006
PBS Baseline (current year dollars)	0	0	0						0	0	0	0	0	0	0
PBS Baseline (constant 1999 dollars)	0	0	0						0	0	0	0	0	0	0
PBS EM Baseline (current year dollars)	0	0	0						0	0	0	0	0	0	0
PBS EM Baseline (constant 1999 dollars)	0	0	0						0	0	0	0	0	0	0

	2007	2008	2009	2010	2011-2015	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050	2051-2055	2056-2060	2061-2065	2066-2070
PBS Baseline (current year dollars)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PBS Baseline (constant 1999 dollars)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PBS EM Baseline (current year dollars)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PBS EM Baseline (constant 1999 dollars)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Baseline Escalation Rates

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
			2.70%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%

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2010	2011-2015	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050	2051-2055	2056-2060	2061-2065	2066-2070
2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%

Project Reconciliation

Project Completion Date Changes:

Previously Projected End Date of Project: 9/1/2028

Current Projected End Date of Project:

Explanation of Project Completion Date Difference (if applicable):

Project Cost Estimates (in thousands of dollars)

Previously Estimated Lifecycle Cost (1997 - 2070, 1998 Dollars): **Actual 1997 Cost:** **Actual 1998 Cost:**

Previously Estimated Lifecycle Cost of Project (1999 - 2070, 1998 Dollars): 0 **Inflation Adjustment (2.7% to convert 1998 to 1999 dollars):** 0

Previously Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars): 0

Project Cost Changes

	Cost Adjustments	Reconciliation Narratives
Cost Change Due to Scope Deletions (-):		
Cost Reductions Due to Efficiencies (-):		
Cost Associated with New Scope (+):		
Cost Growth Associated with Scope Previously Reported (+):		
Cost Reductions Due to Science & Technology Efficiencies (-):		
Subtotal:	0	
Additional Amount to Reconcile (+):	0	
Current Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	**0**	

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